Experimental Neurology

A JOURNAL OF NEUROSCIENCE RESEARCH

EDITOR-IN-CHIEF
John R. Sladek, Jr.
University of Health Sciences/
Chicago Medical School

FOUNDING EDITOR
William F. Windle

VOLUME 113, 1991

ACADEMIC PRESS, INC.
Harcourt Brace Jovanovich, Publishers
San Diego New York Boston London Sydney Tokyo Toronto

Copyright © 1991 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1991 articles are as shown on the article title page; if no fee code appears on the title page, the copy fee is the same as for current articles.

0014-4886/91 $3.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

Contents of Volume 113

Number 1, July 1991

JOHN D. HOULE. Demonstration of the Potential for Chronically Injured Neurons to Regenerate Axons into Intraspinal Peripheral Nerve Grafts 1

JUDITH L. MOSINGER, MADELON T. PRICE, HUI. Y. BAI, HONG XIAO, DAVID F. WOZNIAK, AND JOHN W. OLNEY. Blockade of Both NMDA and Non-NMDA Receptors Is Required for Optimal Protection Against Ischemic Neuronal Degeneration in the *in Vivo* Adult Mammalian Retina 10

THOMAS J. MAHALIK AND GERALD H. CLAYTON. Specific Outgrowth from Neurons of Ventral Mesencephalic Grafts to the Catecholamine-Depleted Striatum of Adult Hosts 18

JOSEPH GONZALEZ-HEYDRICH AND STEPHEN J. PEROUTKA. Postsynaptic Localization of 5-HT_{1D} Receptor Binding Sites in Human Caudate 28

LAWRENCE R. WILLIAMS. Hypophagia Is Induced by Intracerebroventricular Administration of Nerve Growth Factor 31

M. A. HENRY, R. J. DRANGSHOLT, L. E. WESTRUM, AND M. BOTHWELL. Localization of Nerve Growth Factor Receptor Immunoreactivity in the Trigeminal Nucleus of Kittens 38

HUI-QIU WU, WALDEMAR A. TURSKI, URBAN UNGERSTEDT, AND ROBERT SCHWARCZ. Systemic Kainic Acid Administration in Rats: Effects on Kynurenic Acid Production *in Vitro* and *in Vivo* 47

G. J. M. WEBSTER, E. W. A. PETCH, AND T. COWEN. Streptozotocin-Induced Diabetes in Rats Causes Neuronal Deficits in Tyrosine Hydroxylase and 5-Hydroxytryptamine Specific to Mesenteric Perivascular Sympathetic Nerves and without Loss of Nerve Fibers 53

ROBERT E. BURKE AND NICHOLAS KENYON. The Effect of Neonatal Hypoxia–Ischemia on Striatal Cholinergic Neuropil: A Quantitative Morphologic Analysis 63

MARÍA DOLORES MUÑOZ, ANGEL NÚÑEZ, AND ELIO GARCÍA-AUSTT. Frequency Potentiation in Granule Cells *in Vivo* at θ Frequency Perforant Path Stimulation 74

R. M. COOPER AND G. A. THURLOW. [2-^{14}C]Deoxyglucose Uptake in Rat Visual System during Flashing-Diffuse and Flashing-Pattern Stimulation over a 6 Log Range of Luminance 79

ERIK KINNMAN AND HÅKAN ALDSKOGIUS. The Role of Substance P and Calcitonin Gene-Related Peptide Containing Nerve Fibers in Maintaining Fungiform Taste Buds in the Rat after a Chronic Chorda Tympani Nerve Injury 85

Number 2, August 1991

WALTER FISCHER AND ANDERS BJÖRKLUND. Loss of AChE- and NGFr-Labeling Precedes Neuronal Death of Axotomized Septal–Diagonal Band Neurons: Reversal by Intraventricular NGF Infusion 93

SUNNY Y. LU, MICHAEL T. SHIPLEY, ANDREW B. NORMAN, AND PAUL R. SANBERG. Striatal, Ventral Mesencephalic and Cortical Transplants into the Intact Rat Striatum: A Neuroanatomical Study 109

ELIEZER MASLIAH, ANNE M. FAGAN, ROBERT D. TERRY, RICHARD DETERESA, MARGARET MALLORY, AND FRED H. GAGE. Reactive Synaptogenesis Assessed by Synaptophysin Immunoreactivity Is Associated with GAP-43 in the Dentate Gyrus of the Adult Rat 131

CRAIG G. VAN HORNE, INGRID STRÖMBERG, DAVID YOUNG, LARS OLSON, AND BARRY HOFFER. Functional Enhancement of Intrastriatal Dopamine-Containing Grafts by the Co-transplantation of Sciatic Nerve Tissue in 6-Hydroxydopamine-Lesioned Rats 143

ABIGAIL M. SNYDER-KELLER. Striatal C-fos Induction by Drugs and Stress in Neonatally Dopamine-Depleted Rats Given Nigral Transplants: Importance of NMDA Activation and Relevance to Sensitization Phenomena 155

V. SILANI, A. PIZZUTI, A. FALINI, G. BORSANI, E. I. RUGARLI, C. A. MELO, A. SIDOLI, F. VILLANI, F. BARALLE, AND G. SCARLATO. β-Nerve Growth Factor (β-NGF) mRNA Expression in the Parkinsonian Adrenal Gland 166

J. M. BROTCHIE AND A. R. CROSSMAN. D-[^{3}H]Aspartate and [^{14}C]GABA Uptake in the Basal Ganglia of Rats following Lesions in the Subthalamic Region Suggest a Role for Excitatory Amino Acid but Not GABA-Mediated Transmission in Subthalamic Nucleus Efferents 171

JING-XIA HAO, XIAO-JUN XU, HÅKAN ALDSKOGIUS, ÅKE SEIGER, AND ZSUZSANNA WIESENFELD-HALLIN. The Excitatory Amino Acid Receptor Antagonist MK-801 Prevents the Hypersensitivity Induced by Spinal Cord Ischemia in the Rat 182

GARY KRASILOVSKY AND JOHN GIANUTSOS. Effect of Video Feedback on the Performance of a Weight Shifting Controlled Tracking Task in Subjects with Parkinsonism and Neurologically Intact Individuals 192

GEORGE K. HUNG, JOHN L. SEMMLOW, LI SUN, AND KENNETH J. CIUFFREDA. Vergence Control of Central and Peripheral Disparities 202

MICHAEL B. LASKOWSKI, ANN S. NORTON, AND PAMELA K. BERGER. Branching Patterns of the Rat Phrenic Nerve during Development and Reinnervation 212

YASUHIRO MAEDA, JOHN W. BIGBEE, REIKO MAEDA, NOBUYUKI MIYATANI, ROBERT G. KALB, AND ROBERT K. YU. Induction of Demyelination by Intraneural Injection of Antibodies against Sulfoglucuronyl Paragloboside 221

LISA WETMORE AND DWIGHT M. NANCE. Differential and Sex-Specific Effects of Kainic Acid and Domoic Acid Lesions in the Lateral Septal Area of Rats on Immune Function and Body Weight Regulation 226

BARRY E. LEVIN AND AMBROSE DUNN-MEYNELL. Adult Rat Barrel Cortex Plasticity Occurs at 1 Week but Not at 1 Day after Vibrissectomy as Demonstrated by the 2-Deoxyglucose Method 237

HANI KAYYALI AND DOMINIQUE DURAND. Effects of Applied Currents on Epileptiform Bursts *in Vitro* 249

YUKIYOSHI SHIRASAKA, MASATOSHI ITO, IZURU MITSUYOSHI, HARUKI MIKAWA, TADAO SERIKAWA, AND JUNZO YAMADA. Benzodiazepine Receptor Binding in the Spontaneously Epileptic Rat and Its Parent Strains 255

Number 3, September 1991

JEFFREY N. JOYCE. Differential Response of Striatal Dopamine and Muscarinic Cholinergic Receptor Subtypes to the Loss of Dopamine. I. Effects of Intranigral or Intracerebroventricular 6-Hydroxydopamine Lesions of the Mesostriatal Dopamine System ... 261

JEFFREY N. JOYCE. Differential Response of Striatal Dopamine and Muscarinic Cholinergic Receptor Subtypes to the Loss of Dopamine. II. Effects of 6-Hydroxydopamine or Colchicine Microinjections into the VTA or Reserpine Treatment 277

PAUL P. HUANG, BERNADETTE ALLIQUANT, PETER W. CARMEL, AND EMILY D. FRIEDMAN. Myelination of the Rat Retina by Transplantation of Oligodendrocytes into 4-Day-Old Hosts 291

M. LIPARTITI, A. LAZZARO, R. ZANONI, S. MAZZARI, G. TOFFANO, AND A. LEON. Monosialoganglioside GM1 Reduces NMDA Neurotoxicity in Neonatal Rat Brain 301

MICHAEL LEFKOWITZ, DOMINIQUE DURAND, GEORGE SMITH, AND JERRY SILVER. Electrical Properties of Axons within Probst Bundles of Acallosal Mice and Callosi that Have Reformed upon Glial-Coated Polymer Implants 306

M. ZUMKELLER, H.-G. HÖLLERHAGE, E. REALE, AND H. DIETZ. Ultrastructural Changes in the Blood–Brain Barrier after Nimodipine Treatment and Induced Hypertension ... 315

SHELLEY R. WINN, PATRICK A. TRESCO, BETH ZIELINSKI, LLOYD A. GREENE, CHRISTINE B. JAEGER, AND PATRICK AEBISCHER. Behavioral Recovery following Intrastriatal Implantation of Microencapsulated PC12 Cells 322

OSAMU OKUDA, JOSEPH BRESSLER, LISA CHANG, AND MILTON BRIGHTMAN. Viral Kirsten ras Infection Differentiates PC12 Cells and Enhances Their Survival upon Implantation into Brain 330

J. G. ORTIZ, A. E. NEGRÓN, A. P. THOMAS, H. HEIMER, J. A. MOREIRA, M. L. CORDERO, J. ARANDA, AND M. S. BRUNO. GABAergic Neurotransmission in the C57BL/10 sps/sps Mouse Mutant: A Model of Absence Seizures 338

THOMAS B. FREEMAN, MARTHA S. SPENCE, BARBARA D. BOSS, DENNIS H. SPECTOR, ROBERT E. STRECKER, C. WARREN OLANOW, AND JEFFREY H. KORDOWER. Development of Dopaminergic Neurons in the Human Substantia Nigra 344

CARL L. FAINGOLD AND CATHY A. BOERSMA ANDERSON. Loss of Intensity-Induced Inhibition in Inferior Colliculus Neurons Leads to Audiogenic Seizure Susceptibility in Behaving Genetically Epilepsy-Prone Rats 354

CAROL K. PETITO, BERNHARD H. J. JUURLINK, AND LEIF HERTZ. *In Vitro* Models Differentiating between Direct and Indirect Effects of Ischemia on Astrocytes 364

B. W. LEONARD, C. A. BARNES, G. RAO, T. HEISSENBUTTEL, AND B. L. MCNAUGHTON. The Influence of Postmortem Delay on Evoked Hippocampal Field Potentials in the *in Vitro* Slice Preparation 373

OWEN G. MCMASTER, FU DU, EDWARD D. FRENCH, AND ROBERT SCHWARCZ. Focal Injection of Aminooxyacetic Acid Produces Seizures and Lesions in Rat Hippocampus: Evidence for Mediation by NMDA Receptors 378

Brief Communication

DANA LEIFER, EVAN B. DREYER, AND STUART A. LIPTON. Immunofluorescent Characterization of Retinal Ganglion Cell Neurites Cultured on Substrates Coated with Antibodies against Thy-1 386

Announcement 391

Author Index for Volume 113 392

NOTICE

The Subject Index for Volume 113 will appear in the December 1991 issue as part of a cumulative index for the year 1991.